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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,167	03/04/2002	Mikael Berlin	027650.968	2969

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EXAMINER

MUSSER, BARBARA J

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,167

Applicant(s)

BERLIN ET AL.

Examiner

Barbara J. Musser

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cl

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9, 11, 12, and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berlin et al. (WO98/09812) hereafter referred to as Berlin et al. '812 in view of Berlin et al. (WO 97/22536) hereafter referred to as Berlin et al. '536, and Wilkinson et al.

Berlin et al. '812 discloses forming a laminated packaging material by coating an aqueous polymer dispersion on a carrier layer, drying it to form a barrier layer, and bonding the carrier and barrier layer to a paper core. (Abstract; Pg. 6, ll. 34- Pg. 7, ll. 3; Col. 9, ll. 1-8) The reference discloses drying the barrier layer (Pg. 9, 34-35) but does not disclose bonding the barrier layer to the paper core, and then curing the barrier layer at a higher temperature than the drying temperature. Berlin et al. '536 discloses a two stage drying process wherein the barrier layer is first dried at 80-160°C, and then cured at 170-230°C. (Pg. 12, ll. 9-15) It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform a two stage drying process on the barrier layer since this results in an improved gas barrier. (Pg. 12, ll. 9-15) While the reference does not specifically state the barrier layer is cured after application of the

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paper core, one in the art reading the reference as a whole would appreciate that the barrier layer can be applied to the paper core after it is dried(Pg. 13, ll. 27), suggesting that it can be cured after uniting particularly since Wilkinson et al. discloses applying a barrier layer, drying it, bonding a layer to it, and then curing the barrier layer at a higher temperature than the drying temperature for materials that contact food items.(Col. 1, ll. 23-24, 33-46; Col. 3, ll. 31-35, 64- Col. 4, ll. 3; Col. 9, ll. 4; Col. 10, ll. 23) It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond a layer to the dried barrier layer and then cure the barrier layer since Bengtsson et al. suggests the dried barrier layer can be bonded to the core and since the reference suggests the dried layer can also be cured and since Wilkinson et al. discloses this process is known for materials that contact food items.(Col. 1, ll. 23-46)

Regarding claim 2, Berlin et al. '812 discloses laminating the paper core to the carrier layer via an adhesive but does not disclose extruding the adhesive between the core and the carrier. Berlin et al. '536 discloses extruding an adhesive layer to bond the gas barrier to the paper core.(Pg. 10, ll. 13-17) It would have been obvious to one of ordinary skill in the art at the time the invention was made to extrude the adhesive layer to bond the paper core and barrier layer since Berlin et al. '812 is silent as to the method of bonding and since Berlin et al. '536 shows that extruding an adhesive to bond together the same type materials as in Berlin et al. '812, namely a paper core and a barrier layer.

Regarding claim 3, the barrier layer is formed by coating the carrier.(Berlin et al. '812, Pg. 9, ll. 1-8)

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Regarding claims 4 and 5, the barrier layer can contain polyvinyl alcohol.(Berlin et al. '812, Pg. 9, ll. 32)

Regarding claim 6, Berlin et al. '536 discloses the barrier layer can be dried at 100.(Pg. 12, ll. 10)

Regarding claims 7-9, Berlin et al. '536 discloses mixing ethylene acrylic acid with polyvinyl alcohol to create a gas barrier.(Pg. 5, ll. 10-1; Pg. 7, ll. 1-2)

Regarding claims 11 and 19, Berlin et al. '536 discloses the barrier layer can be cured at 170C.(Pg. 12, ll. 11)

Regarding claim 12, the barrier layer is applied at a quantity of 1-10 g/m².(Berlin et al. '812, Pg. 9, ll. 34)

Regarding claim 15, Berlin et al. '536 discloses applying thermoplastic layers to the outer surfaces of both the paper core and the barrier layer.(Figure 2; Pg. 9, ll. 27-30)
It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply thermoplastic layers to the outer surfaces of both the paper core and the barrier layer to protect them and since this would allow heat sealing as shown for example by Berlin et al. '536.(Pg. 9, ll. 35)

Regarding claim 16, as the adhesive layer between the paper and core of Berlin et al., Berlin et al. '536, and Wilkinson et al. is the same as applicant's, it would have the capabilities, namely functioning as a light barrier.

Regarding claims 17 and 18, the formed laminate can be folded to form a packaging container.(Berlin et al. '812, Pg. 2, ll. 5-9)

Regarding claim 20, Berlin et al. '536 discloses the outer layers can be polyethylene.(Pg. 9, ll. 27-30)

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berlin et al. '812, Berlin et al. '536, and Wilkinson et al. as applied to claim 8 above, and further in view of Kotani et al.(EP0590263A2).

The references cited above do not disclose the barrier layer having an inorganic laminar material mixed therein. Kotani et al. discloses a gas barrier composition made of a polymer and an inorganic laminar materials.(Abstract) Gas barrier such as polyvinyl alcohol are still oxygen permeable and it is desired to reduce this permeability by adding inorganic laminar materials.(Pg. 2, ll. 25-28) It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the inorganic laminar material of Kotani et al. to the gas barrier composition since this would reduce the oxygen permeability of the layer even more.(Pg. 2, ll. 25-28)

4. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Desaulniers(U.S. Patent 3,499,820) in view of Berlin et al. '812, Berlin et al.'536, and Wilkinson et al.

Desaulniers discloses forming a laminate used in food packaging by applying a polymer dispersion to a paper substrate and driving off the solvent.(Col. 3, ll. 25-28; Col. 4, ll. 20-28; Col. 7, ll. 1-39) The reference does not disclose applying this laminate to a paperboard core. Berlin et al. '812 discloses forming a laminate of a polymer film coated with a polymer dispersion to a paper core. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the laminate of

Desaulniers to a paperboard core as shown by Berlin et al. since the laminate of Berlin et al. suggests an additional layer is necessary and since the paper/polymer laminate of Desaulniers is too flexible to serve as a container without additional support as shown in Berlin et al. where the polymer/polymer laminate is applied to an additional support before use.

Desaulniers discloses drying the film (Col. 2, ll. 23-24) but does not disclose bonding the barrier layer to the paper core, and then curing the barrier layer at a higher temperature than the drying temperature. Berlin et al. '536 discloses a two stage drying process wherein the barrier layer is first dried at 80-160C, and then cured at 170-230C. (Pg. 12, ll. 9-15) It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform a two stage drying process on the barrier layer since this results in an improved gas barrier. (Pg. 12, ll. 9-15) While the reference does not specifically state the barrier layer is cured after application of the paper core, one in the art reading the reference as a whole would appreciate that the barrier layer can be applied to the paper core after it is dried (Pg. 13, ll. 27), suggesting that it can be cured after uniting particularly since Wilkinson et al. discloses applying a barrier layer, drying it, bonding a layer to it, and then curing the barrier layer at a higher temperature than the drying temperature for materials that contact food items and that this process results in a material which is rigid when wet but not brittle. (Col. 1, ll. 23-24, 33-46, 65-69; Col. 3, ll. 31-35, 64- Col. 4, ll. 3; Col. 9, ll. 4; Col. 10, ll. 23) It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond a layer to the dried barrier layer and then cure the barrier layer since Berlin et al. '536

suggests a two stage drying/curing process results in an improved barrier layer and since Wilkinson et al. discloses this process is known for materials that contact food items and forms laminates which are rigid when in contact with liquid but are not brittle.(Col. 1, ll. 23-46, 65-69)

Regarding claim 14, since the references are intended to make the same types of products as applicant, one in the art would appreciate that the paper used would have the same weight range as applicant.

Response to Arguments

5. Applicant's arguments filed 5/5/04 have been fully considered but they are not persuasive.

Regarding applicant's argument that Berlin et al. '536 and Berlin et al. '812 do not disclose bonding the laminate to the core before curing the polymer dispersion, Wilkinson et al. discloses doing such to form a laminate which is rigid when in contact with liquid but not brittle.

Regarding applicant's argument that Wilkinson et al. does not disclose a gas barrier layer, Berlin et al. 812 does. The purpose of Wilkinson et al. is to show that it is known when applying a polymer dispersion to paper that the dispersion can be dried, layers can be bonded together, and then the polymer can be fully cured.

While Berlin et al. '536 does not disclose curing after applying the dried polymer dispersion to a core, one in the art would appreciate that there are only two alternatives, curing before or after bonding to the core. These would appear to be obvious

alternatives, particularly since Wilkinson et al. discloses it is known to curing after assembling the final product.

Regarding applicant's argument that Berlin et al. '812 and Berlin et al. '536 do not disclose a paper carrier, Desaulniers does.

In response to applicant's argument that Wilkinson et al. is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the reference is in applicant's general field of endeavor in that it is directed to making laminates that contact food and liquid.

Regarding applicant's argument that one in the art would not look to Wilkinson et al., the combination of Berlin et al. '812 and Berlin et al. '536 suggests drying a barrier layer and curing but, but does not disclose when the barrier layer is cured. One in the art would look to other laminates such as Wilkinson et al. which contact food and which are dried and then cured to determine if the polymer film was cured before or after bonding with other layers.

6. In response to applicant's argument that the references do not disclose that less heat is cured to cure when curing occurs after lamination, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would

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otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Regarding applicant's argument that Wilkinson et al. does not disclose the effect of curing on a heat-sensitive plastic, applicant has not indicated the plastic is heat-sensitive nor that it would have any problems with the temperatures used during curing.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Barbara J. Musser** whose telephone number is **(571) 272-1222**. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571)-272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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